

Table S1. Chemical composition (g/Kg, as fed) and fatty acids profile (% of total fatty acid) of the diets.

Chemical composition	CON	ALG20	ALG40	ALG60	Alfalfa hay	DHAgold™
Dry matter	922	927	918	926	927	980
Crude protein	126	127	127	127	134	167
Ether extract	43	57	63	79	13	556
Crude fiber	50	52	52	56	319	45
NDF	157	152	149	169	503	-
ADF	61	56	57	64	381	-
Ash	92	95	93	89	72	88
Fatty acid composition						
C _{14:0}	0.1	1.4	2.8	3.7	2.3	5.9
C _{16:0}	14.3	15.2	17.1	18.7	31.6	13.1
C _{18:0}	3.9	3.2	2.7	2.5	5.8	0.3
^{Cis-9} C _{18:1}	36.1	29.8	24.2	21.8	11.6	n.d.
C _{18:2 n-6}	42.2	36.5	31.1	28.6	26.4	n.d.
C _{18:3 n-3}	1.7	1.6	1.3	1.2	19.7	0.1
C _{22:5 n-6}	n.d.	2.9	5.3	6.2	n.d.	6.8
C _{22:6 n-3}	0.1	7.3	13.4	15.5	n.d.	21.8

n.d.= no detectable; CON= control concentrate without experimental factors; ALG20= control concentrate with 20 g/ Kg *Schizochytrium spp.*; ALG40= control concentrate with 40 g/ Kg *Schizochytrium spp.*; ALG60= control concentrate with 60 g/ Kg *Schizochytrium spp.*; DHAgold= DSM feed industry (DSM Nutritional Products, Marousi, Greece); NDF= Neutral detergent fiber; ADF= Acid detergent fiber.

Table S2. Mean and standard error of means (SEM) of relative transcript levels of several anti- and pro-oxidant-related and immune-related genes expressions in monocytes of goats fed the four experimental diets (CON, ALG20, ALG40 and ALG60) at three sampling time (20th, 40th and 60th).

	DIET (D)					SAMPLING TIME (T)				EFFECT‡		
	CON	ALG20	ALG40	ALG60	SEM†	20	40	60	SEM†	D	T	DxT
<i>CAT</i>	0.224	0.217	0.219	0.240	0.012	0.190 ^a	0.226 ^b	0.259 ^c	0.005	0.562	0.001	0.559
<i>MGST1</i>	0.354	0.212	0.250	0.196	0.089	0.078 ^a	0.552 ^b	0.128 ^c	0.062	0.606	0.001	0.682
<i>MGST2</i>	0.025	0.020	0.022	0.020	0.007	0.009 ^a	0.045 ^b	0.011 ^a	0.004	0.961	0.002	0.971
<i>MGST3</i>	0.005	0.004	0.019	0.016	0.005	0.005 ^a	0.022 ^b	0.006 ^a	0.003	0.132	0.007	0.176
<i>GSR</i>	0.181	0.147	0.144	0.148	0.016	0.074 ^a	0.324 ^b	0.067 ^a	0.010	0.357	0.001	0.945
<i>SOD1</i>	1.408	1.597	1.603	1.823	0.165	0.877 ^a	3.085 ^b	0.861 ^a	0.145	0.390	0.001	0.505
<i>SOD2</i>	1.847 ^a	1.264 ^{ab}	1.269 ^{ab}	0.938 ^b	0.225	0.481 ^a	3.00 ^b	0.509 ^a	0.180	0.010	0.001	0.063
<i>SOD3</i>	0.0070 ^a	0.0003 ^b	0.0010 ^b	0.0030 ^b	0.002	0.002 ^a	0.006 ^b	0.001 ^c	0.001	0.044	0.016	0.105
<i>GPX1</i>	26.510	23.512	23.790	26.868	2.654	12.488 ^a	46.464 ^b	16.558 ^a	2.319	0.726	0.001	0.762
<i>GPX2</i>	0.0015	0.0014	0.0013	0.0014	0.0001	0.001 ^a	0.0023 ^b	0.001 ^a	0.0001	0.909	0.014	0.909
<i>GPX3</i>	0.252	0.049 ^t	0.068 ^t	0.278 ^t	0.086	0.099 ^a	0.345 ^b	0.040 ^c	0.078	0.099	0.013	0.328
<i>NOX1</i>	0.098 ^t	0.170	0.180 ^t	0.182 ^t	0.031	0.074 ^a	0.331 ^b	0.068 ^a	0.020	0.067	0.001	0.308
<i>NOX2</i>	5.294 ^{at}	8.376 ^{ab}	9.227 ^b	8.364 ^{iab}	1.279	3.612 ^a	16.192 ^b	3.642 ^a	0.618	0.042	0.001	0.158
<i>COX2</i>	1.103 ^a	0.670 ^{ab}	0.478 ^b	0.188 ^b	0.206	0.168 ^a	1.480 ^b	0.181 ^a	0.128	0.035	0.001	0.038
<i>ALOX12</i>	0.025	0.025	0.028	0.025	0.004	0.013 ^a	0.047 ^b	0.016 ^a	0.003	0.891	0.001	0.724
<i>ALOX5AP</i>	0.855 ^a	0.629 ^{ab}	0.435 ^{ab}	0.268 ^b	0.182	0.235 ^a	1.133 ^b	0.272 ^a	0.151	0.033	0.001	0.046
<i>PLA2G4A</i>	0.015	0.012	0.011	0.011	0.002	0.006 ^a	0.026 ^b	0.006 ^a	0.002	0.490	0.001	0.278
<i>LTC4S</i>	0.011	0.009	0.010	0.008	0.001	0.005 ^a	0.018 ^b	0.005 ^a	0.001	0.580	0.001	0.867
<i>LTA4H</i>	0.103 ^{ab}	0.082 ^a	0.092 ^a	0.122 ^b	0.008	0.058 ^a	0.176 ^b	0.065 ^a	0.008	0.015	0.001	0.867
<i>PTGER2</i>	0.456 ^a	0.204 ^b	0.207 ^b	0.120 ^b	0.060	0.020 ^a	0.071 ^b	0.010 ^a	0.035	0.004	0.001	0.001

Means with different superscript (a, b, c, d) between dietary treatments and (a, b, c) between sampling time differ significantly ($p \leq 0.05$) while, t ; trend refers to $p < 0.10$.

CON= control concentrate without microalgae; ALG20= control concentrate with 20 g/ Kg *Schizochytrium* spp.; ALG40= control concentrate with 40 g/ Kg *Schizochytrium* spp.;

ALG60= control concentrate with 60 g/ Kg *Schizochytrium* spp.

‡ Effect: The dietary treatment (D), time (T), and the interaction between dietary treatment x time (DxT) effects were analyzed by ANOVA using a general linear model (GLM) for repeated measures and *Post hoc* analysis was performed when appropriate using LSD multiple range test. †SEM: Standard error of the mean

Table S3. Mean and standard error of means (SEM) of relative transcript levels of several anti- and pro-oxidant-related and immune-related genes expressions in neutrophils of goats fed the four experimental diets (CON, ALG20, ALG40 and ALG60) at three sampling time (20th, 40th and 60th).

	DIET (D)					SAMPLING TIME (T)				EFFECT		
	CON	ALG20	ALG40	ALG60	SEM	20	40	60	SEM	D	T	DxT
<i>CAT</i>	0.171	0.210	0.171	0.190	0.016	0.164 ^a	0.187 ^{ab}	0.807 ^b	0.012	0.312	0.054	0.229
<i>MGST1</i>	0.413 ^a	0.334 ^{ab}	0.333 ^{ab}	0.281 ^b	0.040	0.269 ^a	0.415 ^b	0.358 ^b	0.029	0.037	0.001	0.413
<i>MGST2</i>	0.018	0.018	0.014	0.012	0.005	0.013	0.016	.017	0.003	0.697	0.374	0.527
<i>MGST3</i>	0.004	0.003	0.010	0.009	0.004	0.006	0.009	0.006	0.002	0.142	0.235	0.412
<i>GSR</i>	0.353	0.207	0.344	0.221	0.083	0.250	0.336	0.286	0.067	0.469	0.527	0.432
<i>SOD1</i>	0.418	0.458	0.339	0.424	0.050	0.393	0.403	0.433	0.031	0.405	0.505	0.618
<i>SOD2</i>	4.284	4.738	3.779	2.503	1.061	1.882 ^a	5.421 ^b	4.532 ^b	0.884	0.152	0.002	0.792
<i>SOD3</i>	0.0014	0.0018	0.0011	0.0011	0.0001	0.001	0.002	0.001	0.0001	0.391	0.292	0.651
<i>GPX1</i>	35.89	27.324	30.892	26.167	3.777	22.156 ^a	31.582 ^b	36.826 ^b	2.519	0.298	0.001	0.268
<i>GPX2</i>	0.010 ^a	0.004 ^b	0.007 ^{ab}	0.005 ^b	0.002	0.006 ^a	0.005 ^b	0.010 ^b	0.001	0.036	0.046	0.380
<i>GPX3</i>	0.167	0.213	0.146	0.137	0.058	0.159	0.195	0.148	0.036	0.793	0.729	0.719
<i>NOX1</i>	0.012 ^a	0.023 ^{ab}	0.013 ^a	0.025 ^b	0.003	0.015 ^a	0.024 ^b	0.018 ^{ab}	0.002	0.043	0.033	0.194
<i>NOX2</i>	1.993 ^a	2.49 ^{ab}	2.021 ^a	2.749 ^b	0.207	1.907 ^a	2.792 ^b	2.248 ^{ab}	0.156	0.045	0.001	0.071
<i>COX2</i>	0.433 ^t	0.356	0.274	0.245 ^t	0.084	0.258 ^a	0.439 ^b	0.258 ^b	0.051	0.066	0.029	0.749
<i>ALOX12</i>	0.016	0.015	0.013	0.012	0.002	0.010 ^a	0.015 ^b	0.017 ^b	0.002	0.595	0.001	0.858
<i>ALOX5AP</i>	2.107	1.964	1.589	1.374	0.379	1.456	2.188	1.754	0.289	0.409	0.113	0.599
<i>PLA2G4A</i>	0.008	0.008	0.008	0.009	0.001	0.011 ^a	0.008 ^b	0.005 ^c	0.001	0.936	0.001	0.584
<i>LTC4S</i>	0.007	0.004	0.006	0.005	0.002	0.008	0.004	0.005	0.001	0.760	0.281	0.114
<i>LTA4H</i>	0.124 ^a	0.071 ^b	0.102 ^{ab}	0.086 ^{ab}	0.016	0.078	0.094	0.115	0.012	0.028	0.107	0.715
<i>PTGER2</i>	0.756 ^a	0.467 ^{ab}	0.491 ^{ab}	0.329 ^b	0.123	0.316 ^a	0.687 ^b	0.506 ^{ab}	0.089	0.024	0.009	0.771

Means with different superscript (a, b, c, d) between dietary treatments and (a, b, c) between sampling time differ significantly ($p \leq 0.05$) while, t ; trend refers to $p < 0.10$.

CON= control concentrate without microalgae; ALG20= control concentrate with 20 g/ Kg *Schizochytrium* spp.; ALG40= control concentrate with 40 g/ Kg *Schizochytrium* spp.;

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